UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,709	09/22/2003	Yasuo Inohana	03-591	9249

34704 7590 03/08/2007

BACHMAN & LAPOINTE, P.C.
900 CHAPEL STREET
SUITE 1201
NEW HAVEN, CT 06510

EXAMINER	
IP, SIKYIN	
ART UNIT	**PAPER NUMBER**
1742	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,709	INOHANA ET AL.	
	Examiner	Art Unit	
	Sikyin Ip	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 19-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2 and 19-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 20, 21, 26, 27, 29-31, 38-43, 47, and 50-51 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 0411882 (PTO-1449) or EP 0872564. EP 0411882 in page 3, col. 4, lines 10-50 discloses the features including the claimed Cu based alloy composition and in page 5, col. 8, lines 20-38 to eliminate β phase. EP 0872564 from page 2, line 25 to page 3, line 50 discloses the feature including the claimed Cu based alloy composition. Cited references do not disclose the temperature difference between liquidus and solidus lines. But, liquidus and solidus lines are material property which would have been inherently possessed by the materials of cited references. Therefore, the burden is on the applicant to prove that the product of the

prior art does not necessarily or inherently possess characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

With respect to the X, Y, and Z composition expressions that since the claimed alloy compositions are overlapped by alloy compositions of cited references, the compositions of cited references would satisfy said expressions.

Claims 1, 2, 19, 21-25, 27-37, and 41-52 are rejected under 35 U.S.C. § 103 as being unpatentable over JP 60036638 in view of EP 0411882 (PTO-1449) or Hansen.

JP 60036638 in abstract and paragraphs 6-7 discloses the Cu based alloy composition overlapped the claimed Cu based alloy compositions. JP 60036638 does not disclose the temperature difference between liquidus and solidus lines, X-Y-Z compositional expressions, and phases. But, liquidus and solidus lines are material property which would have been inherently possessed by the materials of cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the

claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

EP 0411882 in page 3, col. 3, lines 48-56 discloses the features including the conventional Cu based alloys would have alpha phase. EP 0411882 teaches to eliminate β phase because said phase would cause crack (page 5, col. 8, lines 20-38). Hansen discloses Cu would have pure alpha phase up to about 40 wt.% Zn, then phases mixed with alpha + beta (for example). As is evinced by phase-diagram of Hansen that difference phases are formed due to known alloying elements and claimed elements have been taught by JP 60036638; therefore, phases and their properties (such as volume percent and melting point) would have been inherently possessed by the alloy as taught by JP 60036638 (In re Best, 195 USPQ, 430 and MPEP § 2112.01).

With respect to the X, Y, and Z composition expressions that since the claimed alloy compositions are overlapped by alloy compositions of cited references, the compositions of cited reference would satisfy said expressions.

Response to Arguments

Applicant's arguments filed December 4, 2006 have been fully considered but they are not persuasive.

~~impurities. That is,~~ the copper-base alloys disclosed in EP 0411882 are copper-base alloys containing Ni, B and Fe in addition to Sn and Zn as essential elements, *and are quite* different from the copper base alloy as claimed in the amended claim 1. ~~Therefore, EP 0411882 fails to disclose or suggest any~~ "

Applicants argue that The transitional expression in instant amended claim 1 is "consisting essentially of" which limits the scope of a claim to the specified ingredients and those that do not materially affect the basic and novel characteristics of a composition. Instant specification (page 5) discloses that Ni, Fe, and B could be added (see below).

> The copper base alloy may further comprise one or more elements which are selected from the group consisting of 0.01 to 10.0 wt% of manganese, 0.01 to 10.0 wt% of aluminum, 0.01 to 3.0 wt% of silicon, 0.01 to 15.0 wt% of nickel, 0.01 to 5.0 wt% of iron, 0.01 to 5.0 wt% of chromium, 0.01 to 2.5 wt% of cobalt, 0.01 to 3.0 wt% of titanium, 0.001 to 4.0 wt% of bismuth, 0.05 to 4.0 wt% of lead, 0.01 to 2.0 wt% of magnesium, 0.01 to 0.5 wt% of phosphorus, 0.0005 to 0.5 wt% of boron, 0.01 to

Applicants argue that cited references fail to disclose the temperature difference between liquidus and solidus lines. But, liquidus and solidus lines are material property which would have been inherently possessed by the materials of cited references.

Applicants argue " EP 0411882 also discloses that C is added to form carbide hard particles which further increase the wear-resistance. " But, carbon content of cited reference overlaps the claimed carbon content.

Applicants argue " ~~However,~~ EP 0411882 fails to disclose or suggest that the hot workability of a Cu-Zn alloy is deteriorated by adding Sn " Applicants' attention is directed to EP 041182, page 5, col. 8 below:

Sn (tin) increases the resistance to adhesion of the Cu-base alloy, due to the formation of a tin oxide film on the Cu-base primary crystals. Less than 3% of Sn will not improve the resistance to adhesion, and more than 15% of Sn will cause the formation of cracks in an overlay deposited by using a laser or TIG (Tungsten Inert Gas) arc. Where the Sn content is larger than 15%, a second phase (a structure assumed to be a β phase) becomes a factor in the crack formation. From the Cu-Sn phase diagram (see "Metal Data Book", edited by the Japanese Institute of Metals, Maruzen, (1974), p. 442, Fig. 3-290). ~~It can be seen~~

alloys disclosed in EP 0872564 are copper based alloys containing Ni, Mn, Fe and P as essential elements, and are quite different from the copper base alloy as claimed in the amended claim 1. ~~Therefore, EP 0872564 fails to disclose or suggest any~~ "

Applicants argue that "

Examiner reiterates the response above that page 5 of the instant specification discloses Ni, Mn, Fe, and P are not excluded (see below).

The copper base alloy may further comprise one or more elements which are selected from the group consisting of 0.01 to 10.0 wt% of manganese, 0.01 to 10.0 wt% of aluminum, 0.01 to 3.0 wt% of silicon, 0.01 to 15.0 wt% of nickel, 0.01 to 5.0 wt% of iron, 0.01 to 5.0 wt% of chromium, 0.01 to 2.5 wt% of cobalt, 0.01 to 3.0 wt% of titanium, 0.001 to 4.0 wt% of bismuth, 0.05 to 4.0 wt% of lead, 0.01 to 2.0 wt% of magnesium, 0.01 to 0.5 wt% of phosphorus, 0.0005 to 0.5 wt% of boron, 0.01 to

~~amount of wear of the blanking die. However~~, EP 0872654 fails to disclose or suggest that the hot workability of a Cu-Zn alloy is deteriorated by adding Sn thereto since the temperature difference between the liquidus and solidus lines of the alloy is increased by adding Sn thereto. ~~In addition, EP 0872654~~ "

Applicants argue that "

As is evinced by EP 041182, page 5, col. 8, lines 20-32 that the effect of Sn is well known in the art of cited references. Well known facts need not be disclosed by references since they have no contribution to the art. Nonetheless, the claimed Sn content is overlapped by cited references.

Applicants' argument with respect to Ni content is noted. But, there is no factual evidence that amended Ni content has different properties than original Ni content. Moreover, claims rejected by EP 041182 or EP 0872564 do not have Ni limitation.

Applicants' argument with respect to phase is noted. First, second phase volume reads on zero. There is no requirement that second phase needs to be existed. Therefore, applicants' argument is immaterial. Even though it may exist, EP 041182 discloses known phases can be found in Metal Handbooks and could be eliminated/reduced if it causes crack. Moreover, as is evinced by Hansen that phases are material property which would have been inherently possessed by the material.

Applicants argue that cited references fail to disclose the recited X-Y-Z expressions. With respect to the X, Y, and Z composition expressions that since the claimed alloy compositions are overlapped by alloy compositions of cited references, the compositions of cited references would satisfy said expressions.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
March 2, 2007